**Task ONE: BINARY COMPOUNDS: SALTS, OXIDES AND HYDRIDES**

Binary compounds are composed of two elements

SALTS

Binary salts are composed of any metal and any non-metal except oxygen and hydrogen. Let’s remember the names and the symbols of some metals and non-metals:

**1. -** Fill in the gaps:

**Lithium** is a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and its symbol is\_\_\_\_\_\_

**Calcium** is a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and its symbol is\_\_\_\_\_\_

**Nitrogen** is a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and its symbol is\_\_\_\_\_\_

**Chlorine** is a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and its symbol is\_\_\_\_\_\_

**Potassium** is a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and its symbol is\_\_\_\_\_\_

**Fe** is the symbol of \_\_\_\_\_\_\_\_\_\_\_ (it is a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_)

**F** is the symbol of \_\_\_\_\_\_\_\_\_\_\_ (it is a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_)

**Br** is the symbol of \_\_\_\_\_\_\_\_\_\_\_ (it is a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_)

**Pb** is the symbol of \_\_\_\_\_\_\_\_\_\_\_ (it is a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_)

**2. -** Ask a mate for the symbols of other elements. Do it like this:

−Can you tell me the symbol of …?

−The symbol of … is…

Some examples of binary salts are:

1) CaS / 2) CaF2 / 3) AlCl3 / 4) KCl / 5) Na2S / 6) Al2S3

To name a binary salt:

1. Just name the metal,  
2. name the non-metal and  
3. end the name with the suffix "**ide**."

**3. -** Now, name the salts above

1) CaS is called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and this formula means that in this compound there are as many Calcium atoms as Sulfur atoms.

2) CaF2 is called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and this formula means that there are two atoms of fluorine for every atom of calcium in this compound.

3) AlCl3 is called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and this formula means that…

4) KCl is called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and this formula means that…

5) Na2S is called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and this formula means that…

6) Al2S3 is called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and this formula means that…

**4. –** Ask a mate for the meaning of any formula. Do it like this:

−CARMEN: What is the name of… (e.g. AlF3)?

−ANTONIO: This compound is … but what does this formula mean?

−CARMEN: This formula means that…

OXIDES

Only 2 elements are present, one of which is **oxygen**.

1. name the metal,

2. name the non-metal (which is oxygen obviously) and

3. end the name with the suffix "**ide**."

Na2O: Sodium oxide Ag2O: Silver oxide

BaO: Barium oxide Al2O3: Aluminum oxide

All these oxides are solid compounds. But there are also oxides composed of oxygen + non-metal.

CO2: Carbon dioxide CO: Carbon monoxide

NO2: Nitrogen dioxide SO: Sulphur monoxide

All these oxides are gases and we use prefixes with them to say how many oxygen atoms are present in the molecules.

We can also consider the water H2O as an oxide (hydrogen oxide) although it is liquid at room temperature.

HYDROXIDES

Hydroxides are composed by a metal and the group (OH) which is formed of oxygen and hydrogen that go always together

To name a hydroxide:

1) name the metal

2) add “hydroxide”

Na(OH): Sodium hydroxide Fe(OH)2: iron hydroxide